



4.0 ROOT CAUSE

4.1 **Purpose**

This section defines an acceptable approach to performing the required root cause analysis.

4.2 **Scope**

Each facility has different requirements as to when and how a root cause analysis should be accomplished. Section 4 provides a minimum set of guidelines as to what should be provided as facility and/or site guidance.

4.3 **Guidance**

A successful root cause analysis process is crucial to effective occurrence event resolution for any facility and/or site. This process ensures that the cause of the occurrence is understood and corrective actions are defined to prevent recurrence.

DOE Technical Standard, DOE-NE-STD-1004-92, dated 2/92, provides some guidance on several different root cause methodologies that are available and acceptable for occurrence reporting. It is important for each facility to define the methodology(s) and approaches that may be used. The following is suggested:

- A graded approach is recommended. As outlined in Section 3.0, a significance determination should be made for each occurrence. Site-level guidance should define, based on the significance, when a formal/detailed root cause analysis is required. Naturally, a formal/detailed root cause analysis can be done for an occurrence with lesser significance.
- A process should be defined to identify recurring problems. A series of relatively insignificant events for which a detailed root cause analysis has not been performed, may show different results if grouped together and a detailed root cause determination is performed (e.g., diesel generator problems and environmental monitoring equipment failures.)
- Facility- and/or site-level guidance should define the types of approaches to be used for root cause analysis. This guidance may also include any training required for participants in the analysis and any required documentation. When a formal/detailed root cause analysis is not done, then engineering judgment should be used.
- For the methodology defined for the facility/site, guidance should be given to translate the causes developed from the formal root cause analysis into those specified in DOE Manual 232.1-1.



- Block 23, Description of Cause, of the OR should also be used to state any differences between the formal/detailed root cause analysis and the translated OR cause. Many methodologies do not make the distinction between root, direct, and contributing causes, and it is difficult to translate these into the OR coding. Additionally, in Block 23 of the OR, the method of root cause analysis (e.g., engineering judgment, Management Oversight Risk Tree [MORT], barrier analysis) should be stated.